REMARKS

Applicant has carefully reviewed and considered the Non-Final Office Action mailed February 7, 2005, and the references cited therewith. Claims 1, 10, 15, 17, 18, and 19 are amended. Claim 16 is cancelled. New claims 20 and 21 are added to more fully describe the claimed invention. These claims are supported on page 41 lines 10-12 of the original specification. No new matter is added. Claims 1-15, and 17-21 are pending, and consideration of these claims is requested. Please charge any required fees to deposit account 502931.

TITLE

Applicant has amended the title to more accurately reflect the present set of claims.

Drawing Objections

The Examiner objected to the drawings filed November 12, 2004 because they were not labeled correctly in the top margin. Included is a complete set of replacement formal drawings (Figs. 1A through 32) labeled in the top margin "Replacement Sheet". No further amendments were made to the drawings and no new matter was added.

Specification Objections

Certain of the changes suggested by the Examiner on page 1 of the specification have been made as noted above in the specification amendments.

The Examiner suggested changing the term "adatoms" to "atoms" on page 27, line 26. Applicant respectfully declines to make this change, since Applicant believes the term "adatoms" is appropriate and intended here, and understood by persons of skill in the art. If the Examiner disagrees, Applicant respectfully invites the Examiner to review some of the peer-reviewed scholarly articles available on the internet that describe adatoms (e.g., http://web.mit.edu/cthomp/www/J138.pdf, or for other examples, those that result in a Google search of "adatoms"). If this objection is still maintained, Applicant respectfully requests that the Examiner insert an Affidavit into the file explaining the necessity for the change.

Claim Objections

Claim 3 was not originally entered. Claims 4-20 have been renumbered by the Examiner to claim numbers 3-19. Applicant has made the same changes, and in cases where the dependency of dependent claims changed accordingly, the claims are identified "Currently amended" although the claims are not substantively amended nor has their dependency been changed.

In response to the claim objections to informalities in claims 1, 17, and 19, these claims have been amended.

Suggested Claim Language

As suggested by the Examiner, the word "focussed" has been changed to "focused" in claim 1 and claim 17. Applicant notes that "focussed" is a correct alternative spelling of this word and the change should not have been required.

Claim Rejections – USC § 112

Claims 1-19 were rejected under 35 U.S.C. § 112, second paragraph.

Claims 1, 17, and 19 have been amended to describe a method of forming a "more highly ordered crystalline film structure." "More highly ordered" is a relative term as compared to otherwise identical processes that do not provide the additional energy during deposition, and is thus not subjective. The description in the specification supports this. Reconsideration of the rejection and an early indication of allowance of these claims are respectfully requested. The same applies to dependent claims 2-16, and 18.

Claim 10 has been amended to correct the lack of an antecedent basis for "cadmium".

Claim 15 and claim 18 have been amended to remove the term "high quality." Reconsideration of the rejection and an early indication of allowance of these claims are respectfully requested.

Claim 16 has been cancelled.

Claim Rejections – USC § 102/103

Claim 17 was rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Tyan (4,207,119). Applicant respectfully traverses. Applicant respectfully submits that Tyan does not provide focussed energy to the material being deposited during the deposition of that material. Tyan, at column 3 lines 35-43 instead described

> Therefore, as used here "depositing in the vapor phase" includes, but is not limited to, close-space sublimation, vapor transporting, vacuum evaporation, vapor growth, and sputtering or ion plating wherein ionized or plasma gas, respectively, is the activating medium. "Close-space sublimation" means sublimation from a source to a substrate positioned from the source a distance no greater than the square root of the smaller of the surface areas of the source and of the substrate.

Further, Applicant respectfully submits that Tyan does not deposit highly ordered films using focused energy, but rather uses high temperatures to deposit "polyline" semiconductor films, not highly ordered films.

In contrast, the present claimed invention uses focused energy during deposition. Accordingly, these present claims appear to be allowable over the cited references, and reconsideration and allowance of the claims is respectfully requested.

Claim 17 was also rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Walpita (USPN 6,236,061). Applicant respectfully traverses. Applicant respectfully submits that Walpita does not provide focussed energy to the material being deposited during the deposition of that material. Rather, Walpita at column 7 lines 49-55 describes that

> In the designed solar cell structure described, after deposition of layer 70, it's **[sic]** surface is annealed by laser (shown as 72) at energy 300 mJ/cm2 and 10 Hz at 8-96 pulses at substrate temperatures in the range of 25-200° C. Thereafter a P-silicon layer 74 (p-type doping 1018 /cm3 and 0.05 microns) and a thin titanium film layer 76 (0.03 microns) were deposited.

In contrast, the present claimed invention uses focused energy during deposition. Accordingly, these present claims appear to be allowable over the cited references, and

reconsideration and allowance of the claims is respectfully requested.

Claim Rejections – USC § 103

Claims 1-5, 7-13, 16, 17 and 19 were rejected under 35 U.S.C. § 103(1) as being unpatentable over Tyan. (4,207,119) in view of Armini et al. (4,353,160) and Ovshinsky (4,520,039). Applicant respectfully traverses. Tyan is described above. Armini uses ion beams to implant dopant ions into semiconductors that have previously been formed. Ovshinsky uses separate ion beam guns to deposit different materials in different layers. Neither supply focussed energy to the semiconductor material during deposition of the semiconductor material.

In contrast, the present claimed invention uses focused energy during deposition. Accordingly, these present claims appear to be allowable over the cited references, and reconsideration and allowance of the claims is respectfully requested.

New claims 20 and 21 have been added to more fully describe the claimed invention. These claims are supported on page 41 lines 10-12 of the original specification. No new matter is added. These claims depend upon claim 1. and these claims as a whole are neither anticipated nor made obvious by the cited references. An early indication of allowance of these claims is respectfully requested.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (952-278-3501) to facilitate prosecution of this application.

If not otherwise provided herewith, please consider this a request for an extension of time for a sufficient number of months to enter these papers. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 502931.

Respectfully submitted,

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By their Representatives,

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Date June 7, 2005 By _____
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Reg. No. 36,198

CERTIFICATE UNDER 37 CFR 1.8: I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 7th day of June, 2005.

Charles A. Lemaire
Name

_____
Signature

In the Drawings

Please replace the drawings with the set of FORMAL drawings (Figs. 1A through 32B) each changed only in that each is now marked "Replacement Sheet" per the Examiner's request.